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ABSTRACT

This paper discusses the importance of maternal and infant health for children's educational achievement. Education, health, and nutrition are so closely related that changes in one causes changes in the others. Improvement of maternal and preschooler health and nutrition is a precondition for improved educational achievement. Although parental education is often emphasized, for many women, responsibilities to the home and difficulties in obtaining transportation to school programs make it difficult for them to be involved in parental education. Educated siblings can contribute to younger siblings' health and nutritional status. In schools, teachers have difficulties finding time to teach health and nutrition as a separate subject, and qualified teachers for these subjects are lacking. Elderly people are important transmitters of health and nutritional behavior. In order for intervention to occur, assessments of beneficial food and health customs and of disease patterns should be made. A seven-step assessment procedure is suggested. (RJC)

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HEALTH AND NUTRITION

PRECONDITIONS FOR EDUCATIONAL ACHIEVEMENT

Discussion Paper

for

FIRST INTERNATIONAL MEETING OF

UNESCO PROJECT TO IMPROVE PRIMARY

SCHOOL PERFORMANCE, NUTRITION AND HEALTH

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PRECONDITIONS FOR EDUCATIONAL ACHIEVEMENT

1. Introduction.

The topic of this paper brings together three fundamental conditions for human development and the interrelationship between them. Each of them are focused upon in many sophisticated studies, and planners are doing their best to solve problems with health, nutritional and educational planning. Unfortunately these efforts are largely isolated from each other. Conclusions of most research within the respective subjects provides a statement telling about intra-sectorial and intra-disciplinary research and implementation of development programs. Reality, however, often shows another picture.

It is high time to make a combined effort for intra-sectorial and cross-disciplinary projects focusing upon the improvement of primary education performance with reference to nutrition and health. This paper will bring up some crucial factors, starting from the fetal stage through infancy and early childhood, and up to the first years of primary education.

Many experiments with animals have proved that undernourishment during the last trimester of the pregnancy and during the first months after birth will have serious effects upon human brain development, and undernourishment will also result in subnormal weight of the brain. The effect is permanent, and cannot be corrected by improvement of nutrition later on. Cell-division of the brain will be delayed, which means that children starting off with such undernourishment are intellectually handicapped right from the beginning by having a lower number of brain cells than was possible if they were properly nourished.

There are also investigations showing that the human brain is continually growing until about six months after birth. Undernourishment during this period will another crucial damage for children. Further, infections and other diseases will add another load to the harsh conditions. Children with all these initial health and nutritional problems, thus, are vulnerable target groups for intellectual retardation because of undernourishment. They face difficulties already at the beginning of their schooling and the damage is irreparable!

It is well known that many countries suffer from starvation and drought; these are looked upon as health and nutritional hazards. It is of course a severe health problem, but added to that is the intellectual damage for the survivors, thus it is also an educational problem. Since drought situations are common in several tropical regions, children there have first had insufficient nutrition, secondly a low health status and thirdly an irreparable damage in their intellectual development, hence

their school performance. Such characteristics have often wrongly been interpreted as racial differences! Lack of drinking water, heavy workload and long distances to any kind of social services, e.g. health service and schools are other factors worsening an already strained situation.

This issue was discussed already in Negussie (1981,1988a), based upon Scrimshaw (1967), Winick (1969), Eksmyr (1970), Chinapah and Fägerlind (1979) and Selowsky (1980).

2. The Role of Society.

Education, health and nutrition are closely interrelated in a dialectical way, so that changes in one of them causes changes in the other(s). It is true also for other basic needs, such as clothing, shelter and work. It is further related to each society's economic, political and social-cultural dimensions with reference to culture, religion and also to environment. These relationships are thoroughly discussed in Negussie (1988b), based upon experiences from Ethiopia.

A limited economy in a society causes constraints in the implementation of health, nutritional and/or educational development programs, hence it is a hindrance for the development of good school performance. Conditions differ in rural, semi-urban and urban areas, and there is a tendency that conditions in semi-urban areas are extremely vulnerable. Such areas are in transition from the traditional to the modern, and health and nutritional status of children are seriously affected.

Observations of conditions in rural areas show that there is a severe decline in the number of school-children during periods of starvation. Conditions in rural Ethiopia (southern) witnessed this decline. In 1984-85, a school in Southern Shewa, with normally 12-1300 students declined to around 7-800. It was clear that the reasons for such a decline were: no money for the small amount needed for the school as every single Birr (Ethiopian currency) was needed for the family's survival; the children were not strong enough to walk to school because of hunger; there was no food to be found in the surroundings of the school; and the school gardens were likewise affected by drought. Health conditions at home caused many children to be sick or to die. Conditions in northern Ethiopia were still worse.

3. Problems and Capacities in Family and School.

This paper points out some problems, which are closely related to nutrition and health versus primary education. It is evident that both modern and traditional health and nutrition have many values in common, and much of which can be used in modern development. Their are, for example, many beneficial values, which can be utilized in modern education. They also serve as a knowledge basis upon which better health and nutritional conditions can be grounded. It is of importance to recognize them, and to utlize them. At the same time there are many problems, which affect school performance, but which can be solved with the people

concerned participating in their own health and nutritional planning. When making assessments and interventions it is necessary to identify them.

3.1. The Role of Mother and Child Health Care.

My first point is that the improvement for a better primary school performance starts already when the mother expects her child. Improvement of maternal health and nutrition is one basic precept in planning for improvement. This concerns both health planners and nutritional planners, but also educational planners. Most planning periods are covering ten years at a time, hence children born today are already in the focus of such planning. Therefore, there is a need for an extended pre-natal care for the mother and her child.

Secondly, peri-natal and post-natal care are of utmost importance for the neonate. The importance of breast-feeding in decreasing infant morbidity and infant mortality is evident (Hanson, 1986). The role of breast-feeding in protecting the infant for infections is well-known, and recent studies verify that human milk is rich in antibodies (Hanson et al., 1988). Promotion of breast-feeding will affect infant and child health positively. Further, it can also be seen as an important tool for improved learning capacities later in life. Improved infant/child-care, thus, is another precondition for educational achievement.

Thirdly, there is a close relationship between infant/child mortality and high birth rates. If conditions for mothers and children are improved, the birth rate will in the long run be lower, and more resources for education will be available per child. Much is already on its way with expansion of vaccination programs, like measles, smallpox and poliomyelitis. The importance of handling deficiences and parasites is likewise crucial for child health. Additionally, I see also health care for children during the entire pre-school age as a precondition for educational development.

3.2. The Role of Parental Education.

Parental education has long since been emphasized. It is evident that in families were the parents are educated, there is a better nutritional and health situation for school-children. Here it is of special importance to emphasize the role of the mothers' education (Haraldsen, 1983). However, women's participation in educational activities is low.

It can easily be exemplified that many women in developing countries do not have access to any kind of formal education nor to any kind of improved technology for their work. Their heavy workload affects their health and their strength, and hinders them from participating in school-programs. Literacy campaigns and adult education programs are often held in places far from the homestead, and at a time which is not convenient for women. Lack of school-material, newspapers and books worsen the situation.

In the third world women and girls also are responsible for food production, water and fuel collection and grain grinding. All of them are time consuming and hard tasks, which lower womens' health status and prevent them from participating in educational programs. The custom of giving only leftovers for women and children also affects their own nutritional conditions. Often school starts before breakfast is ready, and children start their day fasting. A long walking distance to the school does not make it better, and in many schools there is not even a water well, which means that children either have to drink contaminated water, beg from neighbors or go without. If they are lucky enough they may have a small portion of food for lunch, but in many cases they have to wait until returning home. It is easy to understand the difficulties in learning and the lack of concentration for school work.

3.3. The Role of Educated Siblings.

During fieldwork in Southern Ethiopia it was observed that health and nutritional status for smaller children was improved after their older siblings were educated. The smaller siblings were well nourished and given proper health care by the older ones. It was especially related to their sisters' education, which is another indication for more attention to girls' education. This was especially evident in rural areas, where adolescent girls still were living with their parents and gradually taught their parents the importance of early nutrition. The younger siblings will have a better chance of school performance later in life. Thus, there is an invisible resource, which is useful in planning for a better school performance.

3.4. The Role of Teachers and Schools.

Many schools had difficulties in finding time and teachers for health education and nutritional education. In the curriculum these subjects are usually included under "home-economics" or "biology" and as they have no own status it is common that they are put aside.

Secondly, there is lack of qualified teachers for such teaching. Primary school teachers are not specialized in such teaching and community health workers, other community workers, home-economists and womens' association workers are usually not directly involved in teaching matters. It is crucial to emphasize the importance of health and nutrition as an educational outcome, particularly in teacher training. Many teachers in developing countries have themselves experienced these difficulties, but may need extra training in health and nutrition. Thus, the curriculum in teacher training institutes may need to be revised and further studies in this area undertaken.

Thirdly, the heterogenous age structure of primary school students needs special attention. The age span may cover between seven and thirty years in one and the same class. Understanding of health and nutritional questions, thus, will vary within

classes and schools. Adult education programs and literacy programs pay more attention to health issues and a closer collaboration between them and primary school planners is crucial. There are students in primary schools, who themselves are parents, and who therefore through a better understanding of the relationship between health, nutrition and education can have an impact upon the educational performance of the next generation.

3.5. The Role of Elderly People.

In her thesis, Negussie (1988) emphasizes the importance of taking elderly people's knowledge into consideration. In many cultures they are the bearers and transmitters of health knowledge and dietary customs. Their knowledge has often been looked upon as curious, but more and more it is clear that they have well grounded self care knowledge suitable for their specific cultural circumstances. Their role is often invisible and unknown. Orality plays a great role, and health behavior as well as nutritional behavior is transmitted informally during household work and in the informal network groups. Many of the elderly speak several languages, changing easily from one language to another and their memorization is well developed. This was observed in health education in health centers in Addis Ababa, where a woman after receiving a short course in nutrition became a brilliant teacher for pregnant women. As she managed several languages, she was her own interpreter when needed. She had learnt her lessons by heart, and modified them whenever she had the need to. Being an elderly woman was an advantage, the young women trusted her and followed her advice. Seen in a long perspective there is a positive impact upon primary school performance for the coming generations.

4. Assessment, Intervention and Identification of Problems.

The preceding discussion has brought about some factors, which are related to health, nutrition and education. It is, nevertheless, of great importance to make indepth studies of several schools in different environment in order to secure reliable data. Epidemiological studies will clearify conditions in certain areas, but within a close geographical area there will be significant differences. Thus, it is of importance to make a thorough selection of places for studies. Cultures and religions may differ within areas, which in its turn affects nutrition and health, and hence also education. It will, for example, be of importance to register whether food is "sacred" or "profane"; whether it is considered "food" or "non-food"; whether food is looked upon as a "social" event, as "medicine" or if there are certain food classifications (Helman,1985).

The study of cultural beliefs and practices belongs to the initial stage of the assessment. In the case of nutrition it is important to study nutritional practices and taboos with reference both to undernutrition and overnutrition, the impact of Western food customs and the traditional food customs. When trying to prevent malnutrition there has to be a certain degree of carefulness, so that the export of Western food customs with their related diseases will not be the case. One has to be

careful not to export overnutrition (e.g. obesitas) or malnutrition in the sense of fibre defiencies instead of beneficial fibre rich food. Otherwise, there will only be a shift in patterns of diseases.

Therefore, I suggest a careful investigation at rural, semi-urban and urban areas, and a screening of beneficial food and health customs on one hand, and a screening of the pattern of diseases on the other hand. Thirdly, it is necessary to register existing resources and competences as well as variations from culture to culture, also related to environment. Likewise, the problems and constraints need to be emphasized.

A study like this requires studies of the family situation and the possibilities and constraints for sufficient nutrition. Further, there is a need for indepth studies in schools with students and teachers involved. Contemporary studies of national, regional and local planning will give complementary information. Statistics need to be compared in order to identify risk groups. Population projections in combination with educational statistics and health statistics may give a hint of future problems and possibilities. Some examples are given in Appendices I-III, based upon statistics from Ethiopia. With a thorough analysis of data concerning the young population, their health status and their participation in primary education it can be possible to identify and predict needs and priorities for the next ten-year period. An increasing young population, sometimes with a majority of girls (Ethiopia), with low participation in primary education and a low health and nutritional status is an observandum. If the risk of increasing adolescent pregnancies (and illegal abortions) is added to such a picture it adds other important background factors for low performance at primary school level.

School health facilities are lacking in most developing countries. The combination of good mother and child health care, followed by good school health care will ensure better conditions for the coming generation. Ministries of Education will need more resources for an expansion of the school health program, in which prevention of many diseases will be a necessary part. The continuation of vaccination programs, the availability of treatment for epidemic diseases like meningitis and measles are crucial. Existing school health programs need to be studied. Increased school health facilities, thus, is a pre-condition for educational performance.

This includes the screening of the disease pattern, with emphasis upon parasitic diseases, iron-deficiency, short-term hunger, protein energy malnutrition, iodine deficiences and other relevant diseases. The role of infections and contagious diseases has to be emphasized. A follow-up of vaccination programs is crucial. Sanitation programs, environmental health including access to latrines, and clean water are vital precepts in this concern.

The integration of health, nutrition and educational issues is vital for an improvement in children's conditions. Local health workers, home-economists and school-teachers need to formalize their collaboration in order to get a combined effort. When

teachers are lacking the local health worker may be the appropriate teacher.

Agencies, for their part, may play an advisory role, but there is also a need for a conscious collaboration between sectors dealing with these issues. An integrated approach in support and of research will ensure a model for development. Intra-disciplinary and intra-sectorial studies will then become a natural part of development programs and support.

It is crucial to discuss the future generation in terms of basic needs. Twenty-five percent of the world's current population are children under the age of fifteen. Eighty percent of them live in the less developed parts of the world where they often comprise close to half of their country's population. In the developed countries, the proportion is around one-quarter (Cordell-McHale,1985). It is crucial to plan for feeding, clothing, and housing them, as well as providing them with health care and education. The relationships between birth and future service requirements are presented by Cordell-McHale (1985:11). Urban growth and rural decline will give us another serious problem to solve.

5. A Plan of Action.

The assessment procedure will contain a series of stages carried out with the use of multiple methods:

1. Indepth case studies with the use of convenient social science methods. Background factors for each country as well as within the country need a careful screening. Cultural, ethnical and environmental factors are crucial for each specific project.

2. School surveys with special attention given to health, nutrition and education, covering interviews with teachers, students and parents. Present health and nutritional status must be surveyed, and local suggestions for improvement have to be recorded. Possibilities for school health facilities and school feeding at local levels need attention.

3. Studies of other social services, such as interviews with community health workers, sanitarians, home-economists, local community association workers, womens' associations, informal network groups, et cetera.

4. Analysis of national and regional statistics and plans for education, health and nutrition in comparison with each other. Perspective population plans and policies (e.g. ten-years) versus educational plans and patterns of diseases give detailed information.

5. Analysis of current curricula in teacher training and primary education as well as comparisons with the curriculum in adult education and educational mass media.

6. Coordinated assessment projects including health, nutrition and primary education (pilot-projects) with emphasis upon epidemiological data as well as qualitative data about societal factors on local, regional and national levels.

7. Comparisons within countries and between countries. Suggestions for local, national and global interventions.

This paper is discussing the topic in general. Specific information about health and education in Ethiopia are found in Negussie's thesis (1988). The model developed in this thesis has relevance for the study of health, nutrition and education in many countries (Appendix V).

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